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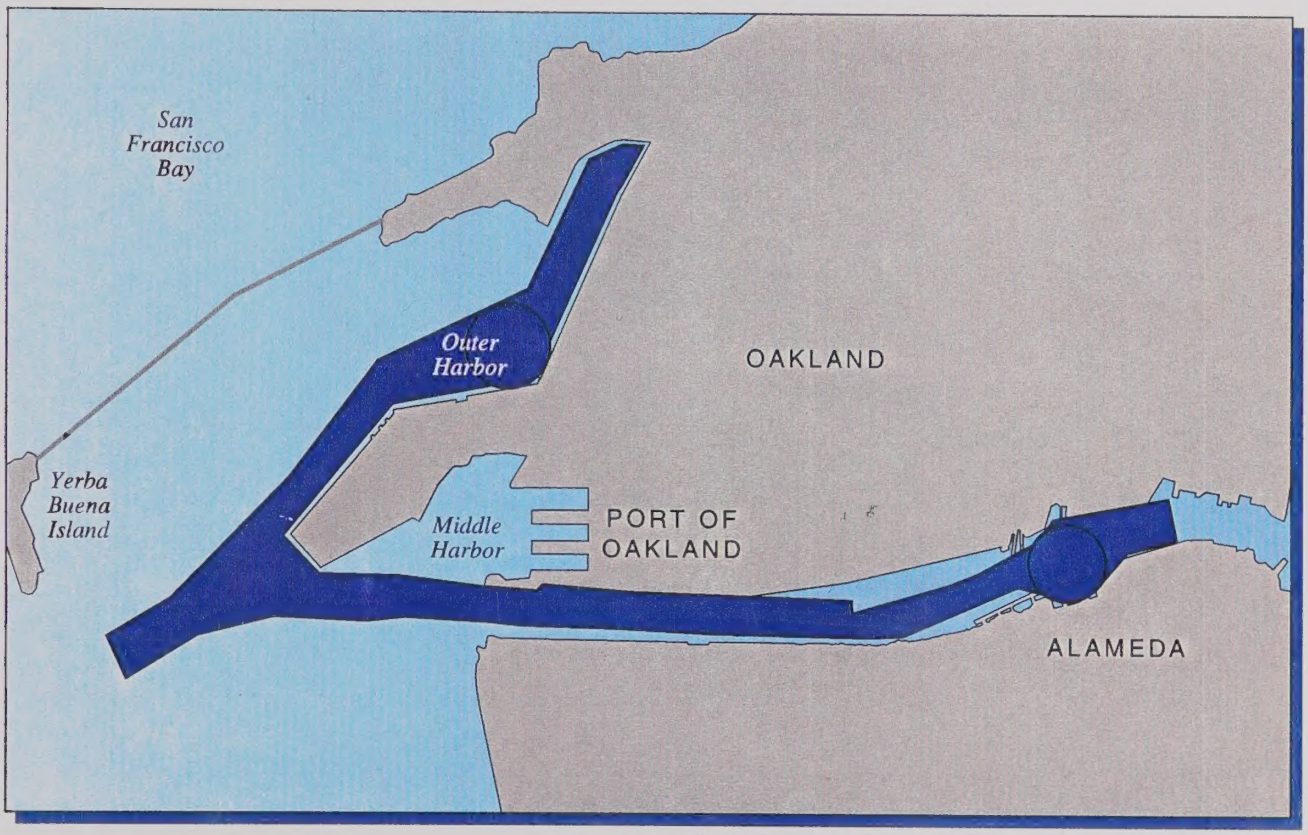
Oakland Harbor Navigation Improvement (-50 Foot) Project

UNIVERSITY OF CALIFORNIA
SEP 14 1999

Revisions to the Final Environmental Impact Report

SCH No. 97072051



Prepared by

Port of Oakland

State Lead Agency

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Revisions to the Final EIR

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REVISIONS TO THE FINAL EIR ON THE OAKLAND HARBOR NAVIGATION IMPROVEMENT (50-FOOT) PROJECT

Introduction

This *Revisions to the Final EIR* adds to the May 1998 Final Environmental Impact Statement/Environmental Impact Report for the Oakland Harbor Navigation Improvement (-50 Foot) Project (50-foot Project FEIS/R; USACE and Port of Oakland 1998). The *Revisions to the Final EIR* has been prepared to update and correct information contained in the 50-foot Project FEIS/R and to provide updated alternatives for the 50-foot Project. This *Revisions to the Final EIR* is divided into two main sections:

1. **Section A** reports the eligibility of the Todd Shipyard for the National Register of Historic Places and the California Register of Historic Resources, and discusses the impact of the 50-foot Project on Todd Shipyard and mitigation measures for that impact.

2. **Section B** addresses other changes to the 50-foot Project and to the EIR, none of which raise any new significant impacts for the Project compared to what was analyzed in the May 1998 FEIS/R.

Section A is the only portion of the EIR that is being recirculated for public comment. The remainder of the document consists of clarifications and slight modifications that do not include any new impacts not previously discussed and analyzed.

SECTION A — THE TODD SHIPYARD HISTORIC DISTRICT

When the Draft EIS/R for the 50-Foot Project was circulated for public comment, the possibility that the Project would affect a potential cultural resource, the former Todd Shipyard in Alameda, was not identified. Commenters on the Draft EIR raised the possibility that the Project's effects on Todd Shipyard could be considered a significant impact on a cultural resource. The FEIS/R addressed that possibility and identified several mitigation measures to be applied in the event that a significant impact occurred. At that time, however, no determination had yet been made whether the former Todd Shipyard was culturally or historically significant.

Since the Draft and Final EIS/Rs were issued, the State Historic Preservation Officer (SHPO) has determined that Todd Shipyard is eligible for listing on the National Register of Historic Places (NRHP) and the California Register of Historic Resources (CRHR). In addition, ship simulation studies, inspections of the structures at the Todd Shipyard that may be affected by the Project, and discussions with the owners and lessees of the site have provided a clearer picture of the extent to which Todd Shipyard would be affected by the Project and of the feasibility of potential mitigation measures. Accordingly, a portion of section 4.5.2 ("Research Investigations and Results") and all of section 5.5.2 of the EIR are revised as follows. Sections 4.5.2 and 5.5.2 are recirculated for comment only as to the Todd Shipyard Historic District, pursuant to section 15088.5(f)(2) of the CEQA Guidelines.

4.5.2 Proposed Dredge Area

Research Investigations and Results

The majority of the available archaeological and architectural survey data for the Port area has been compiled as a result of cultural resources compliance requirements and the Oakland Cultural Heritage Survey (City of Oakland 1994) as well as for the Department of the Navy (EFA West) and the City of Alameda Planning Department. Seventeen separate cultural resources compliance reports and at least four Environmental Impact Statement/Reports include portions of the Port. The reuse/disposal areas are either currently permitted facilities or have been reviewed or are under review in other environmental documents (see Busby et al. 1997).

Six historic districts determined eligible for listing on the NRHP are within or near the Area of Potential Effect (APE). These are: (1) Naval Supply Center Oakland Historic District (NSCO); (2) Oakland Army Base Historic District; (3) Southern Pacific West Oakland Shops Historic District (U.S. Navy and Port of Oakland 1997a,b); (4) NAS Alameda Historic District on NAS Alameda (Woodbridge 1992); (5) Southern Pacific Railroad Industrial Landscape Historic District in Oakland (U.S. Navy and Port of Oakland 1997a,b); and (6) Todd Shipyard Historic District in the City of Alameda (USACE and Port of Oakland 1998). Finally, seven city blocks within and adjacent to the Port and four city blocks adjacent to the Port associated with the Route I-880 Replacement Project (FHWA and Caltrans 1991) each include a number of archaeological features evaluated as eligible for the NRHP under Criterion D. No other NRHP historic districts are present within or adjacent to the Port (Busby et al. 1997; USACE and Port of Oakland 1994; JRP 1996; Maniery et al. 1996).

Three individual historic properties eligible for the National Register of Historic Places were identified within or near the APE: (1) the Oakland Inner Harbor Jetties and Federal Channel (McCarthy and Lerner 1997; Mikesell 1996); (2) the USS Potomac; and (3) the Main Shop Building of the Todd Shipyard Historic District, a large reinforced concrete and steel frame structure built 1910-1911 for the Southern Pacific Company. No other individual properties potentially eligible for the National Register have been identified within the APE.

The general area centered on the Port of Oakland has been identified as possessing moderate potential for prehistoric cultural resources, although this conclusion was developed prior to the information derived from extensive cultural resources compliance research in the 1980s and 1990s (Quaternary Research Group 1976). No prehistoric sites, however, have been recorded in or adjacent to the Port. Early occupation may have been obscured by rising sea levels from 13,000 to 5,000 B.C., and the presence of extensive marshes and periodic flooding from 5000 B.C. onward appears to have limited prehistoric use. The majority of the Port is now within a filled area precluding the surface presence of prehistoric archaeological sites (Bache 1855; Thompson and West 1878; USGS 1899, 1915, 1942, 1980; Merlin 1977; U.S. Navy and Port of Oakland 1997a,b).

Research indicates that the Oakland Estuary was the location of many historic shipwrecks dating from the 19th century. In addition, many ships were abandoned in the eastern end of the Inner Harbor following the Gold Rush due to a decline in the maritime trade (USACE 1984). A Works Progress Administration-sponsored project to remove obstacles to navigation was undertaken in the Inner Harbor in the 1930s with the objective of clearing navigable waters of visible obstacles. No information is available on the removal of submerged vessels and it is possible, although very unlikely, that sunken vessels are present in the harbor (USACE and Port of Oakland 1994). Furthermore, dredging operations

and the construction of other harbor improvements conducted since the turn of the century within the channel and Inner Harbor have undoubtedly removed any submerged vessels or fragments.

Of the six historic districts and three individual historic properties described above, two are within or immediately adjacent to the footprint of the Oakland Harbor Navigation Improvement Project. The first, the Oakland Inner Harbor Jetties and Federal Channel, has been determined eligible for the NRHP. This resource consists of two parallel stone seawalls placed 750 to 1,000 feet apart at the entrance to the Oakland Inner Harbor. These jetties were a component of a plan conceived by Colonel G. H. Mendell, the San Francisco District Engineer from 1871-1895, for harbor improvements to the tidal inlet between Oakland and Alameda. At the time they were built, between 1874 and 1896, the jetties extended nearly 2 miles into the open waters of San Francisco Bay and defined the federal channel. Disposal of dredged material beginning in 1877 and continuing to the present, as well as extensive land fill projects initiated during World War II, have since created hundreds of acres of maritime-related landscape on both the north and south shores adjacent to the jetties. The jetties are owned by the Corps and have been determined eligible for the NRHP at the state level of significance under Criteria A and C. The second property, the Todd Shipyard Historic District in Alameda, is a district comprising 24 structures that has been determined to be eligible for the NRHP pursuant to Criteria A and C because of its part in the transportation history of the San Francisco Bay Area from 1910 — 1963.

Two other historic properties within or partially within the Project footprint have been determined not to be eligible for the NRHP. The first, located within the Port area in the City of Oakland, consists of marine facilities formerly associated with the Western Pacific Railroad mole and ferry system on the Oakland Estuary. These facilities have been determined not eligible for the NRHP (Wall and Delgado 1985; McCarthy 1997). Second, none of the properties associated with the Alameda Facility and Alameda Annex of the Fleet and Industrial Supply Center, Oakland (FISCO) were determined eligible for the NRHP and the facilities were not determined eligible as a district by the SHPO (JRP Historical Consulting Services 1996; Widell 1996).

5.5.2 Proposed Dredging

Project Impacts

The National Register-eligible South Training Wall/Jetty of the Oakland Inner Harbor Jetties and Federal Channel would not be affected by the dredging. No part would be removed, and previous geotechnical studies indicate that dredging would not destabilize the foundation of the South Training Wall/Jetty (USACE and Port of Oakland 1994). The National Register-eligible North Training Wall/Jetty would not be affected by the dredging from the proposed project (it would be demolished by dredging associated with the Port's Berth 55-58 project [see section 9.1.2 of the FEIS/R], which has been evaluated under separate environmental review).

The expansion of the Inner Harbor Turning Basin would, under all alignment options other than Option 7, result in the demolition of certain buildings and structures included in the NHRP-eligible Todd Shipyard Historic District. (Alignment Option 7 and the other seven alignment options are described in the FEIS/R; see the section entitled " Size and Locations Considered for the Inner Harbor Turning Basin," FEIS/R Volume 2, beginning on page 2-7.) As currently envisioned, excavation and dredging for the Inner Harbor Turning Basin, coupled with restructuring of the shoreline to allow continued ship repair operations, may require the demolition or relocation of up to nine buildings and structures located in the District, out of a total of 24 contributing and non-contributing structures. The buildings and structures that would be affected are listed below and are identified on Figure 1.

1. Concrete head house (No. 14 on Figure 1);
2. Pier (No. 15);
3. Pier (No. 16), which does not contribute to the District's eligibility for the NRHP;
4. Wet basin – open water that will be deepened (No. 17);
5. Sheet metal shop (No. 18);
6. The remains of a ship way (No. 22)
7. The remains of ship way (No. 23)
8. Wharf (No. 26), which does not contribute to the District's eligibility for the NRHP ; and
9. Crane (No. 27).

The removal of the nine buildings and other structures described above would constitute a significant impact.

Mitigation Measures

- If feasible, replace the ship repair working space (consisting of approximately 1,200 feet of linear space with adjoining deep water) that would be eliminated by the Project, so that it would be physically possible for ship repair operations to continue at the District.

- If feasible in terms of the physical condition of the buildings and structures, the cost of rehabilitation, and the consent of property owners, relocate one or more of the affected contributing buildings and structures within the Todd Shipyard Historic District and rehabilitate in accordance with the *Secretary of the Interior's Standards for Rehabilitation and Guidelines for Rehabilitation of Historic Buildings*.

- Document buildings and structures prior to any required demolition, pursuant to consultation with the Pacific Coast Basin Systems Support Office, National Park Service, San Francisco. At a minimum, documentation and recordation would meet the standards of the Historic American Building Survey/Historic American Engineering Record (HABS/HAER).

- Work with the City of Alameda to explore the development of a preservation maintenance plan for the historic district. The objective of this plan would be to prevent continued loss of contributing elements, to guard against erosion of historic fabric of the buildings and structures that may be modified, and to salvage significant architectural elements from buildings and structures that are scheduled for demolition.

- Implement all mitigation measures delineated in a Memorandum of Agreement among the U.S. Army Corps of Engineers, the California State Historic Preservation Officer, and the Advisory Council on Historic Preservation; with the Port of Oakland and the City of Alameda as Invited Parties.

With implementation of the mitigation measures that will be set forth in the Memorandum of Agreement described above, the Project's impact on the Todd Shipyard Historic District will be less than significant.

SECTION B — CORRECTIONS AND UPDATES TO THE EIR

This Section B is organized as follows. Section 1 provides an overview of the corrections and updates to the Project. Section 2 describes the added alternatives in detail, and Section 3 presents the updated information and revised impact analysis. Section 4 provides the conclusions.

B.1 OVERVIEW OF CORRECTIONS AND UPDATES

Since the 50-foot Project FEIS/R was prepared (May 1998), three types of new information have become available. First are corrections in the information presented in the FEIS/R's description of air quality and noise impacts from project construction. Second are updates to the FEIS/R's discussions of ballast water discharges and mitigation measures for operational air quality impacts. The third category consists of improved sediment characterization data and improved information regarding the likely disposition of dredged sediments (including information pertaining to rehandling, reuse, and disposal). This information has led to the identification of two new project alternatives described in section B.2 below.

None of the new information analyzed in Section B reveals any significant environmental impact that was not already identified in the FEIS/R. In several instances, the new information demonstrates that impacts discussed in the FEIS/R would be less significant than previously anticipated.

B.2 ALTERNATIVES F10 AND F11

The 50-foot Project FEIS/R identified Alternative F2 as the "preferred alternative." Under Alternative F2, approximately 12.8 million cubic yards (mcy) of dredged material would be dredged and disposed of and reused as follows:

0.5 mcy to Vision 2000 Upland
7.0 mcy to Middle Harbor Enhancement Area (MHEA)
5.2 mcy to Hamilton Wetlands Restoration Site
0.1 mcy to Various Landfills
12.8 mcy Total

At the time of publication of the 50-foot Project FEIS/R, final sediment suitability determinations by the regulatory agencies for the material proposed to be dredged had not been completed. The project sponsors therefore decided that the FEIS/R should include conservative assumptions regarding the amount of dredged material that might be contaminated. Therefore, of the approximately 12.8 mcy to be dredged, the FEIS/R assumed that a total of approximately 2.1 mcy could be: (1) "wetland non-cover material," i.e., material that could not be used at the surface of a wetland but could be used to create wetlands if capped with a minimum of 3 feet of "wetland cover" quality material; (2) contaminated material suitable for use as construction fill; or (3) more contaminated material that would require disposal at a landfill. Preferred Alternative F2 evaluated a reuse/disposal scenario that included up to 1.5 mcy of wetland non-cover material used as confined fill for the MHEA, up to 0.5 mcy of contaminated material used as construction fill at the Vision 2000 Upland area, and up to 0.1 mcy of the most contaminated material disposed of at landfills. The FEIS/R studied the impacts of all of these disposal and reuse options.

Since the FEIS/R was completed, developments have occurred that affect the identification of the "Selected Alternative." First, the project sponsors have decided to evaluate an additional alternative in which dredged material is reused at both the Hamilton and Montezuma wetland restoration projects, in addition to alternatives that reuse the dredged material at only one or the other site, assuming both reuse sites are ready to accept material from the 50-foot Project at the required time. This approach maximizes potential habitat benefits by supporting the initial development of tidal and seasonal wetland habitats at two locations, and improves the flexibility of the construction process.

Second, the sediment testing has continued and the improved sediment characterization data have revealed that of the approximately 12.8 mcy proposed to be dredged, no more than 0.7 mcy (rather than up to 2.1 mcy) would consist of wetland non-cover and contaminated material. The project sponsors believe that this 0.7 mcy figure remains a conservative estimate of the actual volume.

Third, after consultation with regulatory agencies and environmental organizations, the project sponsors have decided that although reuse of wetland non-cover material to fill the MHEA poses no threat of environmental harm, this material shall not be reused at that site. Only material considered suitable for unconfined aquatic disposal (SUAD) would be used in the MHEA. This means that the wetland non-cover material originally proposed for reuse at the MHEA must now be placed at one or more of several alternate locations, including Montezuma Wetlands Restoration, Vision 2000 Upland, or Various Landfills.

Fourth, the project sponsors have determined that it may be necessary to send more than 100,000 cy of the contaminated material to landfills. While it currently appears that the existing reuse sites will be able to accept all of the material that is not contaminated enough to require landfill disposal, some uncertainties remain. These uncertainties include the ultimate availability of the Montezuma project to accept wetland non-cover material, and the ability to coordinate reuse of the dredged material from the 50-foot Project with the development of the Vision 2000 area. Thus, by analyzing the disposal of up to 700,000 cy at a landfill, the potential worst-case impacts associated with landfill disposal will have been evaluated.

Finally, the construction timing may also affect the location of the rehandling facility for dredged sediment requiring upland reuse or disposal. The FEIS/R indicated that the rehandling facility would be located at the Berth 55 Fill Area (on newly-created fastland). Since then, it has become apparent that the currently used and permitted Berth 10 rehandling facility, constructed by the Port of Oakland for a prior terminal construction project, would be available for use in construction of the 50-foot Project. The Berth 10 rehandling facility has a capacity of 30,000 cy in two 15,000 cy cells, compared to the 100,000 cy rehandling facility that would have been constructed at the Berth 55 Fill Area. If the Berth 10 rehandling facility is used, the duration of rehandling activities would increase, and traffic and equipment use patterns would change relative to the Berth 55 Fill Area rehandling facility analyzed in detail in the FEIS/R. The supplemental analysis for the Berth 10 rehandling facility is reflected in the analyses conducted as part of this *Revisions to the Final EIR.*

With these considerations in mind, the project sponsors have identified two new project disposal alternatives to be added to the 15 project alternatives identified and evaluated in the FEIS/R. The new alternatives are F10 and F11 (numbered to follow the last Option F alternative identified in the FEIS/R, Alternative F9). The sediment distribution for the two new disposal alternatives is shown below.

Alternative F10

7.0 mcy to MHEA
2.5 mcy to Hamilton Wetlands Restoration Site (minimum)
2.9 mcy to Montezuma Wetlands Restoration(including 0.3 mcy of non-cover quality material)
0.4 mcy to Various Landfills (all construction fill quality and contaminated material) *or*
0.1 mcy to Various Landfills and 0.3 mcy to Vision 2000 Upland
12.8 mcy Total

Alternative F10 corresponds to the Locally-Preferred Plan (LPP)/Selected Plan presented in the Final Revised Feasibility Study for the proposed Project (USACE and Port of Oakland 1999). Alternative F10 is thus the preferred alternative.

Alternative F11

7.0 mcy to MHEA
5.1 mcy to the ocean
0.7 mcy to Various Landfills
12.8 mcy Total

Alternative F11 represents the least-cost alternative.

Finally, under all disposal alternatives (including new Alternative F10) that include the reuse of clean dredged material at Hamilton or Montezuma, it is possible that if Hamilton and/or Montezuma are not available at the appropriate time, some of the clean dredged material would be stockpiled at the former NAS Alameda for reuse in future development there. The impacts of transporting dredged material to NAS Alameda were studied in the FEIS/R for the 50-foot Project and are not reanalyzed here.

B.3 SUPPLEMENTAL ANALYSIS

The corrections, updates, and new Alternatives described above merit supplemental discussion of certain aspects of Air Quality, Biology, Hazardous Materials and Contaminated Wastes, Hydrology, Noise, Transportation, and Ballast Water impacts. No other resource areas addressed in the 50-foot Project FEIS/R are affected by these changes.

B.3.1 Air Quality

Revised calculations of emissions from construction activities for each of the alternatives analyzed in the FEIS/R, plus calculations of emissions from construction activities for the two additional alternatives described in this document, are presented in Table 1.

Emissions from previously identified alternatives have been recalculated because assumptions regarding emissions from tugs have been refined since publication of the FEIS/R. These recalculations show that emissions from the previously studied alternatives (Alternatives F1 throught F9 and B1 through B6) are all lower than reported in the FEIS/R. In addition, emissions for the two project alternatives have been added that may result in 400,000 to 700,000 cy of dredged material being trucked to landfills, as opposed the 100,000 cy that was studied in the FEIS/R. The emissions shown in Table 1 reflect the use of electric dredge, reformulated fuel and retardation of injection timing at page 5.1-11 (Volume II) of the May 1998 FEIS/R. The FEIS/R's conclusion that emissions from construction activities will be less than significant remains unchanged.

For the operations phase of the project, air quality impacts of Alternatives F10 and F11 would be the same as the impacts of the 15 alternatives previously studied.

Tug Emissions

Construction emissions for each alternative have been recalculated based on refined information about the following: (1) tugboat load factors, (2) loaded and unloaded travel time to and from the dredged material disposal/reuse locations, (3) tugboat horsepower size required for the various disposal/reuse destinations, and (4) scow capacity for the various disposal/reuse locations.

The FEIS/R calculated tug emissions based on a load factor of 80 percent regardless of whether the barge was loaded or unloaded. The revised calculations correct this assumption to reflect an 80 percent load factor when the barge is loaded and a 20 percent load factor when the barge is unloaded. The revised calculations also reflect the fact that the barge loads must now be smaller than previously assumed (to address overflow concerns) so that there will be more barge trips, and the engine size for tugs traveling to SF-DODS will increase from 1,800 hp to 3,000 hp. The revised data is provided in Table 2. Table 2 also shows, by destination, the number of trips that would be required for a given amount of dredged material.

Landfill Volumes

Disposal of 400,000 to 700,000 cy of dredged material (under Alternatives F10 and F11, respectively) at the Altamont, Redwood, or Vasco Road landfill would produce more emissions than disposal of 100,000 cy of dredged material at the same landfills. The increase in emissions would not be in direct proportion to the amount of material disposed because of changes in operating conditions and processing times assumed for the rehandling facility since the time of the FEIS/R preparation. In particular:

- Larger 20-cy end-dump trucks would be used;
- The number of truck trips would be 75 per day (on average during the times when sediment is being off-hauled);
- The facility hours of operation would increase from 6 hours per day to 10 hours per day;
- The number of days of facility operation may increase from 334 to up to 1075 days to account for days when material drying would be the only activity occurring; and
- The number of days that trucks would be hauling material to the landfill may increase to up to 467 days.

Tables 3 and 4 show comparisons between the equipment and time involved in this new scenario compared to those studied in the FEIS/R.

Mitigation for Operational Air Quality Impacts

The FEIS/R for the 50-foot Project, issued in May 1998, stated that Project operations would cause a significant air quality impact because emissions would exceed Bay Area Air Quality Management District ("BAAQMD") significance thresholds for ROG, NOx, SOx, and PM_{10} (Final EIR, pages 5.1-14 to 5.1-15). These emission levels were predicted because the FEIS/R conservatively assumed that the 50-foot Project would be responsible for large increases in the volume of cargo traveling through the Port, and therefore responsible for the vessel, yard equipment, train, truck, and employee vehicle emissions necessary to handle that increased cargo volume (FEIS/R, pages 5.1-12 to 5.1-15). The FEIS/R went on to identify eight mitigation measures that, the EIR concluded, would not be sufficient to reduce the air quality impact to a less than significant level (FEIS/R, pages 5.1-17 to 5.1-18).

Since May 1998, the Port has completed two undertakings that affect the FEIS/R's analysis of air quality impacts and mitigation measures. The first was a study of various potential Port development projects that analyzed how each of the projects would contribute to growth in cargo movement through the Port (JWD 1998, 1999). The study found, that if the only project completed were the 50-foot Project, the Port's cargo throughput capacity would increase by only about 1 percent per year. It was the proposed Berths 55-58 Project that contributed the most to increased cargo throughput.

The results of the cargo study were crucial to the Port's next major undertaking, the EIR for the Berths 55-58 Project. Because the cargo study showed that the Berths 55-58 Project was the greatest contributor to increased cargo throughput, the analysis in the Berths 55-58 Project EIR allocated responsibility to *that* project for the same vessel, yard equipment, train, truck and employee vehicle that had previously been described in the 50-foot Project EIR. Thus when the Berths 55-58 Project EIR was completed, the emissions caused by increased cargo throughput at the Port had been double-counted, with both the 50-

foot Project and the Berths 55-58 Project taking responsibility for the same emissions and the same significant air quality impact.

Pursuant to a consent decree with West Oakland Neighbors, the Port conducted a far more exhaustive study of potential air quality mitigation measures for the Berths 55-58 Project EIR[1] than had been conducted for the 50-foot Project — or, indeed, for any other development project in California history so far as the Port is aware. This effort has been highly praised both by the local community and by BAAQMD. It led to the adoption of a $9 million air quality mitigation package — the Vision 2000 Air Quality Mitigation Program — that includes all cost-effective air quality mitigation measures.

Because the Vision 2000 Air Quality Mitigation Program addresses the same emissions that were addressed in the 50-foot Project FEIS/R, and is based on a more exhaustive analysis, the Program supersedes some of the mitigation measures identified in the 50-foot Project FEIS/R. Three measures identified in the 50-foot Project FEIS/R have been bettered by the Port's commitments in the Vision 2000 Air Quality Mitigation Program. With respect to heavy-duty trucks, the FEIS/R only calls for the Port to support "regional programs" for exhaust treatment retrofits and engine replacements (Measures 4 and 5, FEIS/R page 5.1-17). The Vision 2000 Air Quality Mitigation Program, on the other hand, commits the Port both to spend at least $1.5 million of its own money on such retrofits and/or replacements, and to seek further funding from outside agencies and programs. Similarly, whereas the FEIS/R suggests that the Port "participate in development of a program" to retrofit vehicle fleets used in the Port area (Measure 6, FEIS/R page 5.1-17), the Port has now committed to spend $700,000 on replacement of diesel engines in AC Transit buses that operate largely in the local area.

Four more of the air quality mitigation measures identified in the 50-foot Project FEIS/R are already in place. Measure 1 calls on the Port to design shoreside facilities to minimize vehicle idling and vehicle miles traveled within the Port area. The Port has done this in the design of both the Berths 55-58 Project and the proposed JIT Project. Measure 2 calls on the Port to encourage tenants to retrofit and operate low- or zero-emissions off-road light and medium duty vehicles. Although the tenants' existing vehicles contribute very low emissions compared to other emissions sources operating at the Port, the Port has, nevertheless, already begun to encourage tenants to operate lower-emissions vehicles. Measure 7 states that the Port should consider paving unpaved roads and parking lots in the maritime area of the Port. The plans for both the Berths 55-58 and the JIT include paving all roads and parking lots. Measure 8, calling for street sweeping and cleaning at regular intervals in the Port area and the West Oakland area, is already being implemented by the Port for the Port area and by the City of Oakland for the West Oakland area.

Finally, the extensive air quality mitigation analysis conducted for the Berths 55-58 Project EIR reveals that the one remaining mitigation measure proposed in the FEIS/R for the 50-foot Project, Measure 3, would not be cost-effective. As is stated above, light and medium-duty vehicles operated by Port tenants at and near the Port contribute very little to the emissions generated in the area, so the cost-effectiveness of retrofitting such vehicles is very poor (see Measure 3, FEIS/R page 5.1-17). For example, the Berths

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1 Also pursuant to the consent decree, the study of mitigation measures and the resulting mitigation program applied to the JIT as well as to the Berths 55-58 Project.

55-58 EIR reported that if all 106 tenant maintenance vehicles were replaced with zero-emissions vehicles, at a cost of $5.2 million, the emission reduction would be only 0.5 ton of NOx per year.

Based on this analysis, the FEIS/R for the 50-Foot Project is revised as follows. Measures 1, 2, and 7 are retained as written. Measure 3 is deleted as infeasible because of its low cost-effectiveness. Measures 4, 5, and 6 are deleted because they were already adopted as part of the Berths 55-58 Project. Measure 8 is revised to read, "Continue program of street sweeping and cleaning at regular intervals in Port area."

B.3.2 Biology

The increase of landfill disposal quantities from 100,000 cy to 400,000 or 700,000 cy, as described in Alternatives F10 and F11, respectively, would not affect biological resources. The material would be taken to existing landfills where sensitive species or habitats would not be affected. Consistent with the evaluation presented in the 50-foot Project FEIS/R, biological impacts from landfill disposal of dredged material would remain insignificant.

Alternative F10 includes the reuse of dredged material at both the Hamilton and Montezuma wetland restoration sites, whereas the FEIS/R alternatives included one or the other, but not both. This new alternative uses volumes of sediment within the ranges previously evaluated in the FEIS/R, although not with the two project sites in combination. The success of both projects depends on a reliable source of sediment so that restoration can be planned and carried out in a timely manner. Assuming both restoration/disposal projects are permitted and available for use concurrent with the Port's need for disposal sites, the Port's use of both sites in combination would have added benefits by facilitating restoration efforts at both sites, rather than at one to the exclusion of the other. In this respect, relative to other alternatives evaluated in the FEIS/R, Alternative F10 would maximize the beneficial reuse of dredged materials for the restoration of tidal and seasonal wetlands and shallow subtidal habitat.

B.3.3 Hazardous Materials and Contaminated Wastes

The only new potential hazards arise from the increased volume of dredged material that may be hauled to a landfill. This material will require drying prior to being off-hauled. The potential impacts associated with the increased volume of material to be dried and off-hauled are described below.

Exposure of the Public

As described in Appendix Q of the FEIS/R (Volume II), potential exposures to all receptors except rehandling facility workers were evaluated assuming a 4-year exposure duration. This 4-year duration was based on the entire duration of the project, instead of the actual period of time that sediment would most likely be transported. Based on the current information, the transport of contaminated sediments to landfills would occur over a period of up to 3 years, rather than the 4 years evaluated in the FEIS/R. During this time, there would be a very slight risk of a contaminated sediment release if a truck carrying the materials were involved in an accident. The FEIS/R evaluated the potential risk associated with this type of release, and concluded that the potential impact was less than significant. The potential impact remains less than significant even if the quantity transported to a landfill increases from 100,000 cy to 400,000 or 700,000 cy.

Exposure of Workers

The increased transport of material to a landfill would increase the duration of exposure for workers handling the material (i.e., rehandling facility workers and truck drivers hauling the material to the

landfill). The FEIS/R evaluated potential exposures to truck drivers assuming a 4-year exposure duration, thus the increase in sediment rehandling would not affect the potential exposures to truck drivers. The only change in exposure assumptions resulting from the increase in the quantity of dredged material off-hauled to a landfill is the change in exposure duration for rehandling facility workers. The calculations in Appendix Q assumed that 100,000 cy of dredged material would be transferred through a rehandling facility. The estimated duration of these rehandling activities was up to 6 months. The currently proposed scenarios assume that 400,000 to 700,000 cy of dredged sediment would be transferred through the rehandling facility. This increase in dredged material requiring rehandling increases the duration of rehandling activities to as much as 3 years. (The increase in sediment rehandling does not correlate directly with the time required to process 100,000 cy because the overall rate of transfer of material through the rehandling facility has increased slightly.)

Because the previous analysis assumed that the most contaminated material would be transferred through the rehandling facility, the increase in dredged material rehandling duration has only a very small impact on the overall risk to rehandling facility workers. As stated in Appendix Q, if the worst-case material from the Inner Harbor Turning Basin remains in the rehandling facility for more than 90 days, a potentially significant impact could result. The current information indicates that the longest period that the most-contaminated material would remain in the rehandling facility is 75 days. This estimate is based on the total quantity of the most contaminated material (20,000 - 30,000 cy; EVS 1998) and the estimated cycle time for both cells in the rehandling facility. Thus, the potential risks associated with handling the most contaminated material are less than significant due to the small quantity of the material.

The potential risk associated with other sources of dredged material increases linearly with the duration of rehandling activities; thus, for the maximum duration proposed, the potential risk increases by a factor of up to 7.0 compared to that calculated in Appendix Q. A 7-fold increase in potential risk to rehandling facility workers could result in the cumulative risk for the duration of the dredging activity potentially slightly exceeding 1×10^{-6}. The potential impacts can be mitigated to less than significant using the mitigation measures described in Appendices Q and R of the FEIS/R. No new mitigation measures are required.

B.3.4 Hydrology

Water quality impacts might, absent mitigation, be affected by the increase in landfill disposal to between 400,000 and 700,000 cy. This increase would increase the use of the Berth 10 rehandling facility, as described under "Hazardous Materials and Contaminated Wastes" above. However, the permit for the Berth 10 rehandling facility contains mitigations that address water quality concerns. Implementation of these mitigations makes use of the facility acceptable to regulatory agencies and would ensure that extended use of the Berth 10 facility would not cause any significant water quality impact.

The mitigation measures that were identified for the rehandling facility at the Berth 55 Fill Area would apply as long as that facility is in use. There would be no new impacts as a result of increasing the volume of material transferred through the rehandling facility.

B.3.5 Noise

The analysis of construction noise for the 50-foot Project has been updated to reflect the following six changes that have occurred since the FEIS/R was completed:

1. Electric dredges, originally recommended as mitigation measures, are now proposed as part of the project itself.

2. A better understanding of the use of tender boats and tugs associated with dredges, along with direct measurement of tender boat noise, has led to adjustments in the projections of noise from dredging activities.

3. The changes in tug sizes, load factors, and trip distribution for transportation of dredged material to Hamilton, Montezuma, and SF-DODS, described above under Air Quality, have been considered, but do not significantly affect projected noise levels.

4. The proposed increase in the off-haul of contaminated dredged material to landfills would not increase daily truck trips or the associated noise effects.

5. The former NAS Alameda Officers Housing was unoccupied at the time of the original noise analysis. Some of the homes have since become occupied. Accordingly, noise measurements have been taken at the Officers Housing to reflect current ambient noise conditions.

6. The Port's noise analysis for the proposed Berths 55-58 Project employed several assumptions and methodologies that differed from those used in the 50-foot Project FEIS/R. The noise analysis for the 50-foot Project has been brought into conformity with the Berths 55-58 Project noise analysis in the following areas:

   - Barrier attenuation from the Cypress Freeway and associated soundwalls has been reduced to 6 dBA from the 15 dBA used in the 50-foot FEIS/R, increasing the noise that is assumed to reach West Oakland; and

   - Pile driving noise is now estimated in L_{eq} as well as L_{max}, allowing more direct comparison of pile driving noise to Oakland Noise Ordinance standards.

Figure 2 shows the noise sensitive receptors.

Project Impacts

As a result of the changes in the project as well as updated adjustment factors and ambient noise levels, the project noise analysis for construction has been revised (see Table 5). These revisions show that construction noise from the 50-foot Project still would have no significant noise impact in West Oakland or on Yerba Buena Island.

The revisions also show that significant impacts on Alameda Island, as measured under Oakland Noise Ordinance standards, would be reduced, and those that did occur would require less mitigation to reach a less-than-significant level, than was reported in the FEIS/R. Thus the sensitive receptors requiring mitigation would be the Mosley Avenue neighborhood (Coast Guard Housing) which requires mitigation of pile-driving noise emanating from the Alameda Gateway vicinity on the south side of the Inner Harbor Turning Basin. As measured by the Oakland Noise Ordinance standards, no significant noise impacts would remain after mitigation. This is a change from the FEIS/R, which reported that impacts at four to eight residential units on Mosley Avenue would remain significant after mitigation. Construction noise impacts on Alameda would remain significant and unmitigable only because dredging is proposed to occur at hours that conflict with the City of Alameda Noise Ordinance.

Cumulative Impacts

The cumulative impacts analysis has been revised to take into account both the changes in the 50-foot Project noise analysis and the most recent information regarding construction noise from the proposed Berths 55-58 and Joint Intermodal Terminal (JIT) projects (see Table 6). In West Oakland, cumulative noise levels would exceed the nighttime standard. This exceedance is attributable to the JIT project, which is the closest to the West Oakland neighborhood. Implementation of the noise control measures that were adopted as part of the JIT Final EIR (Port of Oakland 1999) would reduce the combined noise levels sufficiently to comply with Oakland noise standards.

In Alameda, the mitigation of pile-driving noise on the south side of the Inner Harbor Turning Basin, described above, will avoid any significant cumulative impact at Mosley Avenue or the Former NAS Alameda Officers Housing.

The Enlisted Bachelors Housing at former NAS Alameda is currently unoccupied. If that housing becomes occupied for residential uses by the time construction of the 50-foot Project begins, mitigation may be required to avoid a significant cumulative impact. On weekend days, mitigation consisting of controls on pile-driving noise on the south side of the Inner Harbor Turning Basin (part of the 50-foot Project); controls on earth-moving equipment and pile drivers for the proposed Berths 55-58 Project, and controls on bulldozer noise at the potential former NAS Alameda stockpile site would be more than sufficient to mitigate cumulative impacts to less than significant. At night, noise controls on earth-moving equipment and pile drivers for the Berths 55-58 Project would be more than sufficient to avoid any cumulative impact at the Enlisted Bachelors Housing.

Thus, the changes in assumptions and analytical methods set forth here result in little change from the results set forth in the FEIS/R, but demonstrate that several noise impacts from construction are less significant than previously reported.

B.3.6 Transportation

Ground Transportation

Of the project changes described in this document, only the changes that affect the volume of material going to the various landfills would affect ground transportation.

Increasing the volume of material that would be taken to a landfill would not increase daily traffic beyond that described in the FEIS/R (in fact, if the Berth 10 rehandling facility is used, daily truck trips would be greatly reduced), but would extend the duration of dredged material processing. For Alternative F10, material would be hauled intermittently over approximately 20 months. For Alternative F11, the hauling period would be extended to about 2.9 years. The traffic generated by material hauling operations would be limited by the throughput of the Berth 10 rehandling facility. The total project impacts from construction activities would remain less than significant with mitigation.

The operations phase of Alternatives F10 and F11 would, like the previously studied alternatives, result in significant level-of-service (LOS) impacts at certain intersections. Because the only change associated with the new alternatives is a change in construction phase activities, operations impacts are the same as for all other "action" alternatives. These impacts would be less than significant with the implementation of the mitigation measures previously identified in the FEIS/R. Cumulative LOS

impacts on Bay Area freeways would be potentially significant. Although the project's contribution to those impacts would be minimal, this impact remains identified as significant and unmitigable.

Vessel Transportation

Impacts on vessel transportation from Alternatives F10 or F11 would remain unchanged from those originally analyzed in the FEIS/R.

B.3.7 Ballast Water

This revision to the ballast water analysis focuses on the assignment of vessel calls to the 50-foot project. The ballast water analysis in the 50-foot FEIS/R was based on the Port's estimate of increases in vessel calls associated with all of the Port's proposed new maritime projects as projected at the time the FEIS/R was published. Subsequently, the Port recognized that allocating all of the vessel calls to the 50-foot project was inconsistent with the container cargo allocation analysis[2] that formed the basis for other components of the project analysis. The container cargo allocation analysis was developed by Jordan, Woodman, Dobson (JWD 1997). The Port therefore retained JWD to expand their analysis to include vessel calls (JWD 1999). The JWD analysis estimated the vessel calls associated with each maritime project individually and cumulatively.

Table 7 shows the revised estimated ballast water discharge from the 50-foot Project if only the future vessels attributable to the 50-foot Project (JWD 1998) are included in the calculations. Table 7 is a revision of Table 1 in FEIS/R Volume V, Appendix X, page X-8, line 32. The other table numbers referenced in Table 7 refer to tables in the FEIS/R.

Table 7 shows that the total estimated ballast water discharge in the year 2010 with the 50-foot Project would be 1,705,000 metric tons; this volume was reported as 3,256,000 metric tons in Table 1 in the ballast water analysis in the FEIS/R (Volume V, Appendix X, page X-8) when all the future ship calls attributable to all the Port's planned maritime projects were considered. With the 50-foot Project by itself, the number of vessel calls is reduced substantially. Not only will the vessel fleet continue to modernize (as is reflected in the "without Project" vessel mix shown in Table 7), but the deeper channels will allow the shipping companies to use the largest, most efficient vessels when calling on Oakland. Thus, under the Project-only condition, the total number of vessel calls drops from 1,630 to an estimated 973, and the percentage of modern vessels (those discharging an estimated 1,000 metric tons of ballast water per call, rather than 4,000 metric tons as is the case for the older Panamax vessels) increases from approximately 10% of the total vessel calls to 75% of the total vessel calls. These changes in the type of vessels and the number of vessels account for the anticipated substantial reduction in ballast water discharges. This reduction in discharges demonstrates that the 50-foot Project would not cause a significant impact from ballast water discharges.

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2 The container cargo allocation analysis was designed to distribute the total project container growth resulting from the 50-foot Project and the two Vision 2000 projects (Berths 55-58 Project and JIT Project) among the three projects to allow accurate analysis of potential environmental impacts associated with each project individually.

The remainder of the description of the ballast water issue, as contained in the FEIS/R (see Volume V, Appendix X, page X-6, line 22 through page X-11, line 10) still applies.

Using the JWD (1998) estimates of vessel calls, the Port estimates that implementation of the related Berths 55-58 project (without channel deepening) could increase the volume of ballast discharges associated with vessels calling on the Port by approximately 5 percent over existing levels. The Port has committed to mitigate the impacts of its Berths 55-58 project by adopting an ordinance requiring ships calling at Port facilities to conduct ballast water exchange at sea. This ordinance is modeled on a regulation currently in effect at the Port of Vancouver, Canada. It was adopted by the Board of Port Commissioners on June 15, 1999. By flushing ballast water from distant ports out of their ballast tanks in the open ocean, ships leave potentially invasive species in the ocean (to which they are not adapted, and in which they are unlikely to survive). The ships then enter the Port carrying seawater that is largely free of species likely to survive in nearshore and estuarine environments. The Port's ordinance requires oceanic ballast water exchange except when conditions would make such an exchange hazardous to a vessel or its crew; requires ships to provide records of their ballast water practices; and includes sanctions for noncompliance. The data collected under the ordinance are public information and will, therefore, be available to the scientific community for further research.

The ballast water ordinance applies to all vessels calling at existing and future Port terminal facilities, not just the Berths 55-58 project terminals (Port of Oakland 1998). By reducing the volume of discharge of ballast water that originates from exotic nearshore and estuarine environments from *all* ships using the Port, this ordinance goes far beyond mitigating the 5 percent increase in ballast water volume that could result from the Berths project.

B.4 CONCLUSIONS

As discussed in this document, new, updated, and corrected information has become available since the completion of the FEIS/R for the 50-foot Project in May 1998. As a result the Port performed additional analysis to determine whether this information would result in a change in project impacts. Minor changes in impacts were identified. No new significant impacts were identified, and most potential impacts were shown to be reduced slightly. No new mitigation measures are required to address the changes identified in Section B of this document.

REFERENCES

Bache, A.D. 1855. Map [U.S. Coast Survey]. Bay of San Francisco, California. Angel Island to Point Avisadero. By the Hydrographic Party under the command of Lieut. James Alden, U.S. Navy, Asst U.S. Coast Survey. Facsimile on file, Basin Research Associates, San Leandro.

Busby, Colin I., Melody E. Tannam and Donna M. Garaventa. 1997. Historic Property Survey Report/Finding of Effect. 50-Foot Channel Navigation Improvements Project, Oakland Harbor, Alameda County. On file, Port of Oakland, City of Oakland and Science Applications International Corporation, Santa Barbara. October.

CAL/OHP (California Department of Parks and Recreation, Office of Historic Preservation). 1997. Letter to Lt. Colonel Richard G. Thompson, Corps of Engineers, San Francisco District, from Ms. Cherilyn Widell, State Historic Preservation Office. Oakland Harbor Navigational Improvements — Determination of National Register Eligibility for Alameda and Oakland Harbor Jetties and for WPRR Oakland Mole. Letter dated October 15. Copy of letter on file at the Port of Oakland, Corps of Engineers, and Basin Research Associates.

City of Oakland. 1994. *Draft Historic Preservation Plan, an Element of the Oakland General Plan.* _

EVS. 1998. Comprehensive Final Sediment Analysis Report. Prepared by EVS Environmental Consultants. June.

FHWA and Caltrans (U.S. Department of Transportation, Federal Highway Administration and State of California Department of Transportation). 1991. *Proposed Route I-880 Replacement Project from I-980 Interchange to I-80/I-580/I-800 Distribution Structure in the Cities of Oakland and Emeryville, Alameda County, California.* Final Environmental Impact Statement/Report. Vols. I-II. FHWA-CA-EIS-90-05-F, SCH NO. 90030140, 4-ALA-800-32.6/34.2, 4-191-190270-3EQ16. Copy on file, Basin Research Associates, San Leandro, CA.

JRP Historical Consulting Services. 1996. *Historical and Architectural Evaluation, Alameda Facility and Alameda Annex Fleet and Industrial Supply Center (FISC), Oakland, Alameda, Alameda County, California.* Copy on file, Department of the Navy, EFA West, Naval Facilities Engineering Command, San Bruno, California.

JWD (Jordan Woodman Dobson). 1997. *Container Movement Growth Scenario — Vision 2000 Developments through 2010.* Prepared by Jordan, Woodman, and Dobson for the Port of Oakland. October 14.

_____. 1998. *Container Movement Growth Scenario — Vision 2000 Developments through 2010.* Prepared by Jordan, Woodman, Dobson for the Port of Oakland. October 13.

_____. 1999. *Container Movement Growth Scenario — Vision 2000 Developments through 2010.* Prepared by Jordan, Woodman, Dobson for the Port of Oakland. February

Maniery, Mary L., Cindy Baker, and Keith Syda. 1996. *An Archeological Investigation of the Fleet Industrial Supply Center — Alameda Annex/Facility, and Naval Air Station, Alameda Family Housing (East and North), Alameda County, California.*

McCarthy, Celia. 1997. Record Form, DPR 523 for Marine Facilities Associated with Western Pacific Railroad Mole, Port of Oakland. Celia McCarthy, Environmental Planning Department, Port of Oakland. On file, Basin Research Associates, San Leandro, CA.

McCarthy, Celia, and Richard Lerner. 1997. National Register of Historic Places Registration Form. Oakland Harbor Training Walls/Jetties and Federal Channel (also known as Oakland Inner Harbor Jetties and Federal Channel). On file, Basin Research Associates, San Leandro, CA.

Merlin, Imelda. 1977. *Alameda: A Geographical History*. Friends of the Alameda Free Library, Alameda, California: David Printing Company.

Mikesell, Stephen D. 1996. Primary Record and Building, Structure, and Object Record Forms for Alameda Training Wall (also known as the Oakland Inner Harbor South Training Wall/Jetty which is associated with the Federal Channel). Attached to Wall, February 4, 1977 letter to Cherilyn Widell, State Historic Preservation Officer. (Note this does not include the North Training Wall/Jetty.) Copy on file, Basin Research Associates, Inc., San Leandro, CA.

Port of Oakland. 1998. *Berths 55-58 Project — Draft Environmental Impact Report*. SCH No. 97102076. Prepared by URS Greiner Woodward Clyde, Oakland, CA. December 11.

_____. 1999. *Joint Intermodal Terminal Project — Final Environmental Impact Report.* SCH No. 98012078. Prepared by GAIA Consulting, Inc., Oakland, CA. June.

Quaternary Research Group. 1976. *Archaeology in Alameda County: A Handbook for Planners* [Written and designed by D.P. Miller]. Alameda County Planning Department, Hayward.

Thompson and West. 1878. *Official Historical Atlas Map of Alameda County, California*. Oakland: Thompson and West (reprinted by Valley Publishers, Fresno, 1976).

USACE (U.S. Army Corps of Engineers). 1984. *Final Feasibility Study and Environmental Impact Statement — Oakland Inner Harbor Deep-Draft Navigation Improvements, Alameda County, California.*

USACE and Port of Oakland. 1994. *Final Supplemental Environmental Impact Report/Environmental Impact Statement — Oakland Harbor Deep-Draft Navigation Improvements.* SCH No. 91073031. Prepared by Science Applications International Corporation. June.

_____. 1998. Oakland Harbor Navigation Improvement (-50-Foot) Project — Final Environmental Impact Statement/Environmental Impact Report. SCH No. 97072051. Prepared by Science Applications International Corporation, Santa Barbara, CA. May.

_____. 1999. Oakland Harbor Navigation Improvement (-50-Foot) Project — Final Revised Feasibility Study. Prepared by GAIA Consulting, Inc., Oakland, CA. February.

USGS (U.S. Geological Survey). 1899. San Francisco, California [Quadrangle]. Topographic Scale 1:62,5000. USGS, n.p (reprinted 1904, 1906, 1908, 1911, 1913).

_____. 1915. San Francisco, Calif. [Quadrangle]. Topographic Scale 1:62,500. USGS, n.p. (reprinted 1929, 1932, 1947).

_____. 1942. San Francisco, Calif. [Quadrangle]. Topographic Scale 1:62,500. 29th Engineer Reproduction Plant, Portland, OR.

_____. 1980. Oakland West, Calif. [Quadrangle]. Topographic Scale 1:24,000. USGS, Menlo Park (1959 photorevised).

U.S. Navy and Port of Oakland. 1997a. *Draft Environmental Impact Statement/Environmental Impact Report — Disposal and Reuse of Fleet and Industrial Supply Center, Oakland/Vision 2000 Maritime Development*. March.

_____. 1997b. *Final Environmental Impact Statement/Environmental Impact Report — Disposal and Reuse of Fleet and Industrial Supply Center, Oakland/Vision 2000 Maritime Development*. July.

Wall, L. S. and J. P. Delgado. 1985. *Assessment of Eligibility for National Register of Historic Places, Deteriorated Marine Facilities.* Western Pacific Railroad, Oakland and San Francisco. California Historic Preservation Planning Montera.

Widell, Cherilyn. 1996. Letter to Mr. Louis S. Wall, Coordinator, Cultural Resources Program, Environmental Planning Branch, Department of the Navy, EFA West, Naval Facilities Engineering Command, San Bruno. Re: National Register Evaluation of FISCO Alameda Annex and Facility and Adjacent Navy Family Housing, Alameda, CA. Dated July 31, 1996. On file, State Historic Preservation Officer, Department of Parks and Recreation, Sacramento.

Woodbridge, Sally B. 1992. Historic Architectural Resources Inventory for the Naval Air Station , Alameda. Copy on file, U.S. Navy, Engineering Field Activity, West, Naval Facilities Engineering Command, San Bruno, CA.

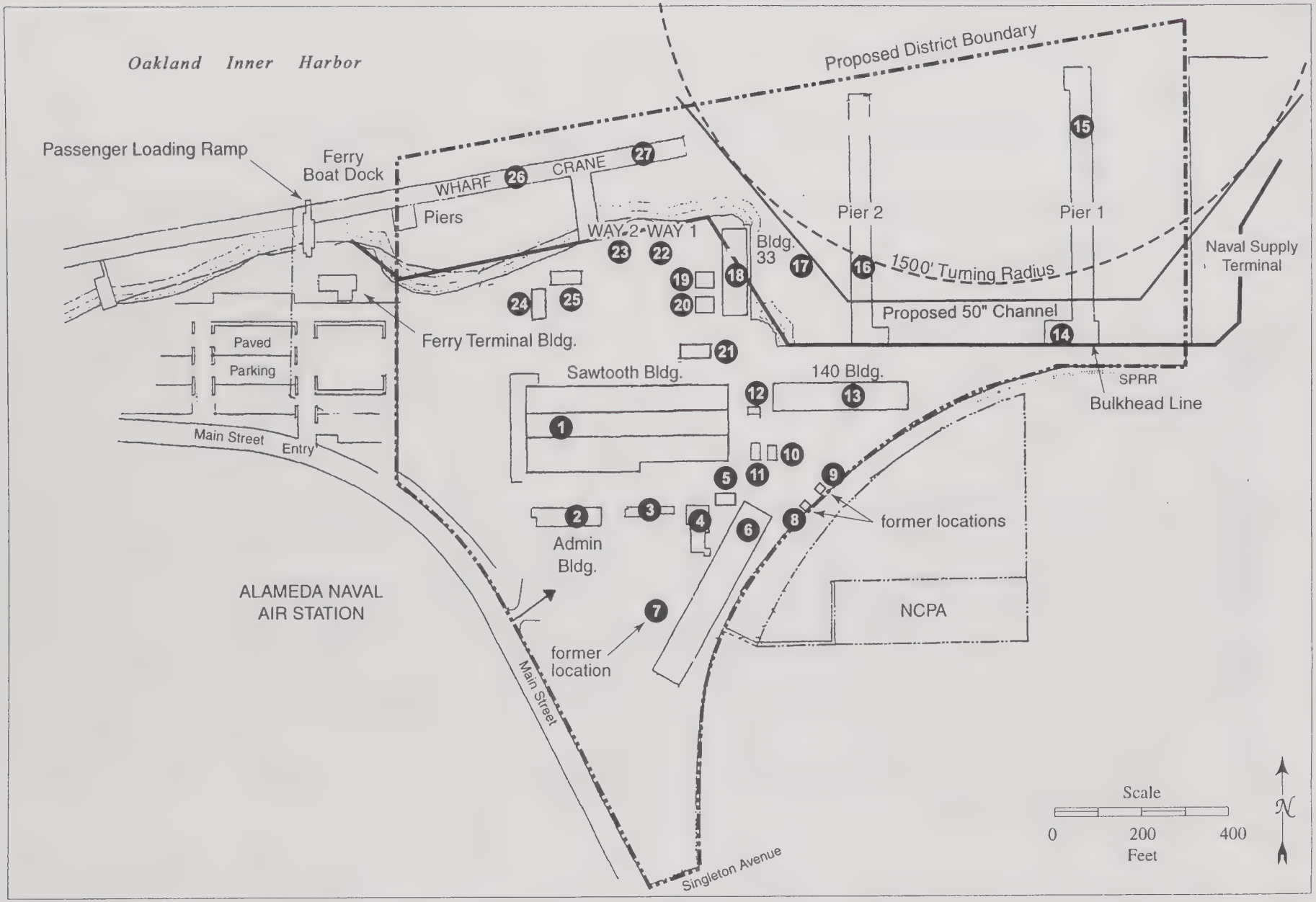

Figure 1

TODD SHIPYARD WITH BUILDING IDENTIFICATIONS

Table 1. Summary of Total Bay Area Air Basin Emissions Associated with Each Construction Alternative

Alternative	EMISSIONS (TOTAL MITIGATED TONS DURING PROJECT CONSTRUCTION PERIOD)					
	ROG	*CO*	*NOx*	*SO_2*	*PM_{10}*	*TOTAL*
B1	23.3	61.1	188.6	4.3	15.9	293.2
B2	22.1	61.3	166.0	3.9	13.5	266.8
B3	23.8	64.4	181.7	4.2	15.0	289.2
B4	30.8	74.1	267.9	5.9	23.3	402.1
B5	24.0	65.4	181.4	4.2	14.9	290.1
B6	25.4	65.2	208.8	4.7	17.7	321.9
F1	25.5	63.7	220.0	4.9	19.0	333.1
F2	23.8	64.0	187.7	4.3	15.7	295.5
F3	26.2	68.5	210.1	4.8	17.7	327.4
F4	20.1	54.9	160.8	3.8	13.4	252.9
F5	19.2	55.0	144.0	3.4	11.6	233.4
F6	24.1	67.7	186.0	4.3	15.5	297.5
F7	23.0	67.8	166.1	4.0	13.4	274.4
F8	17.9	47.2	144.0	3.3	12.0	224.5
F9	19.8	55.9	152.3	3.6	12.5	244.0
F10	29.5	96.2	262.1	6.6	21.5	415.9
F11	34.5	127.2	344.0	9.0	28.1	542.8

Table 2. Distribution of Dredge Material, Trips, Load Factors, and Travel Time Allocations

Dredge Site/ Disposal Site	*Maximum Quantity(a) (mcy)*	*No. of Scow Trips*	*Travel Time To*	*Travel Time From*	*Idle Time/ Trip*	*Composite Tugboat Load Factor (b)*	*Scow Size*	*Loading Capacity*	*Cubic Yards/ Scow (c)*	*Tugboat HP*
Outer Harbor/ Hamilton	5.2	1,444	3 hours (d)	2 hours (e)	1.5 hours	0.44	5,000 cy	0.9	3,600	1,800
Outer Harbor/ Montezuma	5.2	1,444	4 hours (f)	3 hours (g)	1.5 hours	0.46	5,000 cy	0.9	3,600	1,800
Outer Harbor/ SF-DODS	6.9	2,156	12 hours (h)	8.5 hours (I)	0.5 hour	0.54	5,000 cy	0.8	3,200	3,000
Inner Harbor/ Vision 2000 Site	2.6	722	0.3 hours (j)	0.2 hours (k)	1.0 hour	0.22	5,000 cy	0.9	3,600	800
Outer Harbor/ New Berth 21	1.165	324	0.3 hours (j)	0.2 hours (k)	1.0 hour	0.22	5,000 cy	0.9	3,600	800
Inner Harbor/ MHEA	1.0	278	0.4 hours (l)	0.3 hours (m)	1.0 hour	0.25	5,000 cy	0.9	3,600	800
Outer Harbor/ MHEA	0.583	162	0.4 hours (l)	0.3 hours (m)	1.0 hour	0.25	5,000 cy	0.9	3,600	800

Notes:

(a) Maximum quantity that would be dredged/disposed under one or more of the various project alternatives.

(b) Composite load factor based on the following load factors: 0.8 (loaded scow), 0.2 (empty scow), and 0.05 (idle).

(c) Assumes scow load is 20% water; so at a loading capacity of 90%, a 5,000-cy capacity scow carries 3,600 cy: e.g., 0.9 x 5,000 cy x 0.8 = 3,600 cy.

(d) 16 nmi. @ 7 knots

(e) 16 nmi. @ 9 knots

(f) 27 nmi. @ 7 knots

(g) 27 nmi. @ 9 knots

(h) 58 nmi. @ 5 knots

(i) 58 nmi. @ 7 knots

(j) 1 nmi. @ 3.3 knots

(k) 1 nmi. @ 5 knots

(l) 1.5 nmi. @ 3.75 knots

(m) 1.5 nmi. @ 5 knots

Table 3. Port of Oakland 50-Foot Deepening Project (Final EIS/R Assumptions)
Emission Source Data Associated with Handling and Transport of Material to Landfill
Handling and Transport of Material (100,000 cy) to Landfill (a)

Activity/Equipment Type	*Horse Power (Hp)*	*Load Factor*	*Number Active*	*Fuel Use (Gal/Hr)*	*Hours Per Day*	*Work Days (b)*	*Total Fuel Usage*
D-8 Bulldozer	300	0.50	1	9.90	6	334	19,840
Loader	300	0.50	2	19.80	6	334	39,679
End-DumpTruck (10-12 cy)	220	0.50	10	72.60	6	334	145,490

Note:

a Contaminated material will be hauled to either the Altamont, Redwood, or Vasco Road landfill. Since each of these landfills is approximately the same distance from the rehandling facility (approximately 35 miles), the transport emissions are expected to be the same regardless of which location is used.

b Work days for transport based on the use of 10 trucks per day, 3 trips per truck per day, and 10 cy per trip.

Table 4. Port of Oakland 50-Foot Deepening Project (Current Assumptions)
Emission Source Data Associated with Handling and Transport of Material to Landfill
Handling and Transport of Material (700,000 cy) to Landfill (a)

Activity/Equipment Type	*Horse Power (Hp)*	*Load Factor*	*Number Active*	*Fuel Use (Gal/Hr)*	*Hours Per Day*	*Work Days (b)*	*Total Fuel Usage*
D-8 Bulldozer	300	0.50	1	9.90	6	1,075	63,856
Loader	300	0.50	2	19.80	10	467	92,466
End-Dump Truck (20 cy)	300	0.50	25	247.5	10	467	1,155,825

Note:

a Contaminated material will be hauled to either the Altamont, Redwood, or Vasco Road landfill. Since each of these landfills is approximately the same distance from the rehandling facility (approximately 35 miles), the transport emissions are expected to be the same regardless of which location is used.

b Work days for bulldozer based on total number of days to fill, dry, and empty 700,000 cy in the two cells at the rehandling facility. Work days for transport based on the use of 25 trucks per day, 3 trips per truck per day, and 20 cy per trip.

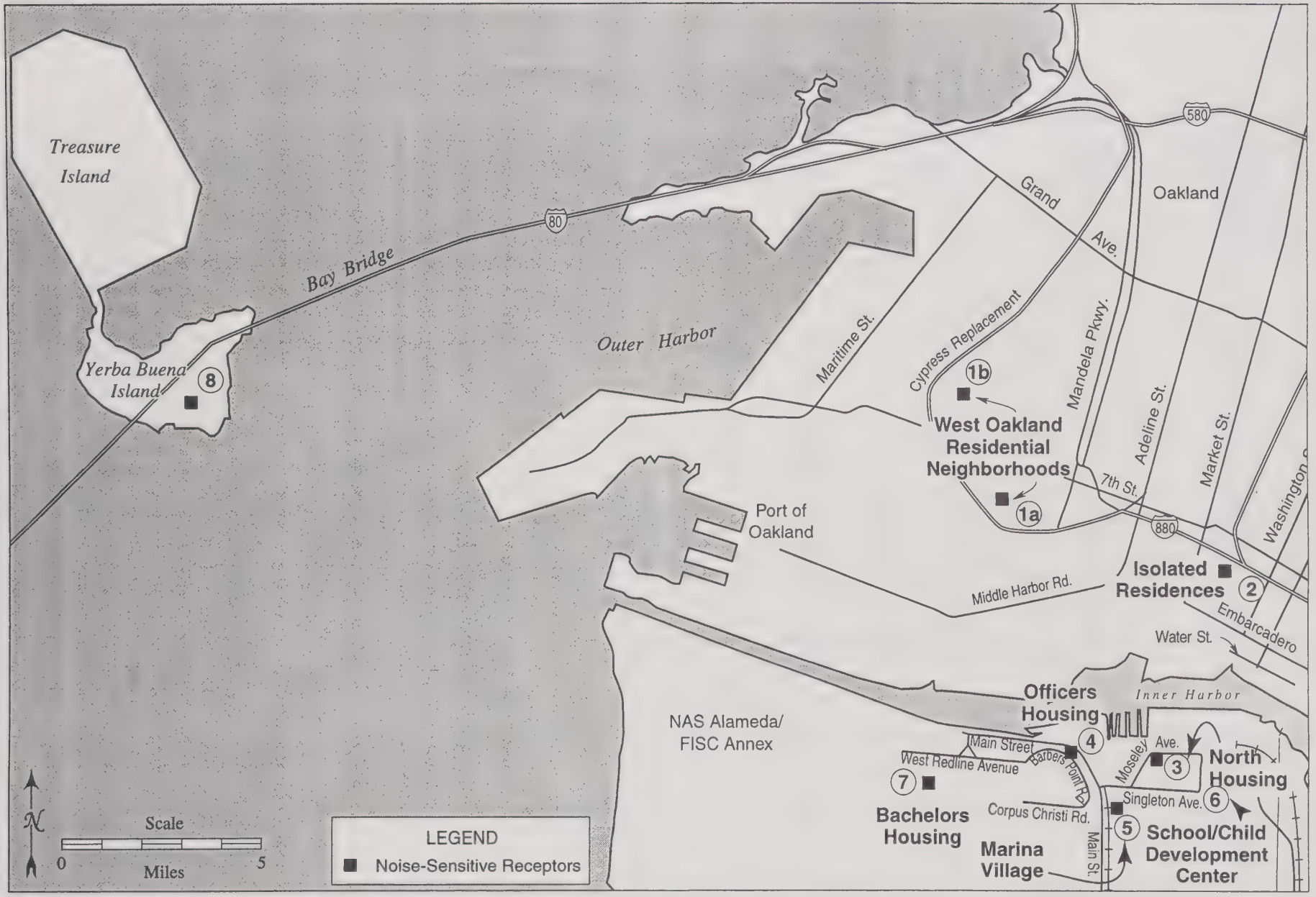

Figure 2

EXISTING AND FUTURE OAKLAND AND ALAMEDA NOISE-SENSITIVE RECEPTORS

Table 5. Summary of Project Construction Noise Levels at Sensitive Noise Receptors

Receptor Location	Time Period	Highest Noise Level at Receptor due to Project					Combined Noise Level (Without Mitigation)	Combined Noise Level (With Mitigation)	Oakland Noise Ordinance Standard	Exceeds Standards After Mitigation?
		Inner Harbor Turning Basin	Inner Harbor	Middle Harbor Enhance. Area	Outer Harbor	Alameda Cons. Fill				
#1a-3rd & Peralta Neighborhood (Oakland)	Weekday Day	42	26	25	27	-	42	42	65	No
	Weekend Day	42	26	25	27	-	42	42	55	No
	Nighttime	26	26	25	27	-	31	31	52	No
#1b - 8th & Pine Neighborhood (Oakland)	Weekday Day	27	13	19	34	-	36	36	65	No
	Weekend Day	27	13	19	34	-	36	36	55	No
	Nighttime	11	13	19	34	-	33	33	52	No
#2 - Brush & 4th Vicinity (Oakland)	Weekday Day	48	31	-	-	-	48	48	65	No
	Weekend Day	48	31	-	-	-	48	48	55	No
	Nighttime	32	31	-	-	-	34	34	52	No
#3 - North Housing on Mosley (Alameda)	Weekday Day	66	39	-	-	32	66	65	65	No
	Weekend Day	66	39	-	-	32	66	53	55	No
	Nighttime	50	39	-	-	0	50	50	52	No
#4 - NAS Alameda - Officers Housing	Weekday Day	63	55	19	-	44	64	63	65	No
	Weekend Day	63	55	19	-	44	64	55	55	No
	Nighttime	46	51	19	-	0	52	52	55	No
#5 - Marina Village (Alameda)	Weekday Day	63	33	-	-	32	54	54	65	No
	Weekend Day	63	33	-	-	32	54	54	55	No
	Nighttime	37	33	-	-	0	39	39	55	No
#6 - Miller School & Child Dev. Center (Alameda)	Weekday Day	53	32	-	-	24	53	53	65	No
	Weekend Day	53	32	-	-	24	53	53	55	n/a
	Nighttime	37	32	-	-	0	38	38	52	n/a
#7 - NAS Alameda - Bachelors Housing	Weekday Day	44	42	27	-	54	55	55	65	No
	Weekend Day	44	42	27	-	54	55	55	55	No
	Nighttime	28	42	27	-	0	42	42	47	**No (a)**
#8 - Yerba Buena Island (Alameda)	Weekday Day	-	-	-	32	-	32	32	65	No
	Weekend Day	-	-	-	32	-	32	32	55	No
	Nighttime	-	-	-	32	-	32	32	45	No

Note: "-" Noise Level does not measurably contribute to combined noise level.

(a) The nighttime noise standard is based on ambient noise levels. At Bachelors Housing, which is currently unoccupied, the existing ambient noise level at night is 47 dBA. If Bachelors Housing becomes occupied, the ambient noise level is expected to increase.

Source: Geier & Geier Consulting, Inc. (1999)

Table 6. Summary of Cumulative Construction Noise Levels at Sensitive Noise Receptors

		Highest Noise Level at Receptor due to Project												
Receptor Location	Time Period	Inner Harbor Turning Basin	Berths 55-58	FISCO Demolition	Inner Harbor	Middle Harbor Enhancement Area	Outer Harbor	New Berth 21	JIT	Alameda Cons. Fill	Combined Noise Level (Without Mitigation)	Combined Noise Level (With Mitigation)	Oakland Noise Ordinance Standard	Exceeds Standards after Mitigation?
#1a-3rd & Peralta Neighborhood (Oakland)	Weekday Day	42	46	40	26	25	27	20	53	-	54	54	65	No
	Weekend Day	42	46	40	26	25	27	20	53	-	54	54	55	No
	Nighttime	26	46	0	26	25	27	20	53	-	54	52	52	No
#1b - 8th & Pine Neighborhood (Oakland)	Weekday Day	27	40	34	13	19	34	31	53	-	53	53	65	No
	Weekend Day	27	40	34	13	19	34	31	53	-	53	53	55	No
	Nighttime	11	40	0	13	19	34	31	53	-	53	52	52	No
#2 - Brush & 4th Vicinity (Oakland)	Weekday Day	48	28	-	31	-	-	-	-	-	48	48	65	No
	Weekend Day	48	28	-	31	-	-	-	-	-	48	48	55	No
	Nighttime	32	28	-	31	-	-	-	-	-	35	34	52	No
#3 - North Housing on Mosley (Alameda)	Weekday Day	66	40	-	39	-	-	-	-	32	66	65	65	No
	Weekend Day	66	40	-	39	-	-	-	-	32	66	54	55	No
	Nighttime	50	40	-	39	-	-	-	-	0	51	51	52	No
#4 - NAS Alameda - Officers Housing	Weekday Day	63	52	-	55	19	-	-	-	44	64	63	65	No
	Weekend Day	63	52	-	55	19	-	-	-	44	64	55	55	No
	Nighttime	46	52	-	51	19	-	-	-	0	56	53	55	No
#5 - Marina Village (Alameda)	Weekday Day	63	36	-	33	-	-	-	-	32	54	54	65	No
	Weekend Day	63	36	-	33	-	-	-	-	32	54	42	55	No
	Nighttime	37	36	-	33	-	-	-	-	0	41	39	52	No
#6 - Miller School & Child Dev. Center (Alameda)	Weekday Day	53	33		32	-	-	-	-	24	53	53	65	No
	Weekend Day	53	33		32	-	-	-	-	24	53	41	55	n/a
	Nighttime	37	33		32	-	-	-	-	0	39	38	52	n/a
#7 - NAS Alameda - Bachelors Housing	Weekday Day	44	55	42	42	27	-	-	-	54	59	59	65	No
	Weekend Day	44	55	42	42	27	-	-	-	54	59	55	55	No
	Nighttime	28	55	0	42	27	-	-	-	0	57	47	47	No (a)
#8 - Yerba Buena Island (Alameda)	Weekday Day	-	-	-	-	-	32	-	-	-	32	32	65	No
	Weekend Day	-	-	-	-	-	32	-	-	-	32	32	55	No
	Nighttime	-	-	-	-	-	32	-	-	-	32	32	45	No

Note: "-" Noise Level does not measurably contribute to combined noise level.

(a) The nighttime noise standard is based on ambient noise levels. At Bachelors Housing, which is currently unoccupied, the existing ambient noise level at night is 47 dBA. If Bachelors Housing becomes occupied, the ambient noise level is expected to increase.

Source: Geier & Geier Consulting, Inc. (1999)

1 **Table 7. Estimated Ballast Water Discharge (Metric Tons)[1]**

Vessel Capacity (TEUs)	*Estimated Average Ballast Water Discharge per Ship Call*	*Fleet Mix in 1996 (Table 5.7-1)*	*Estimated Ballast Water Discharge in 1996*	*Fleet Mix w/o Project in 2010 (Table 8.3-4)*	*Estimated Ballast Water Discharge w/o Project in 2010*	*Fleet Mix w/ Project in 2010[2]*	*Estimated Ballast Water Discharge w/ Project in 2010*
Panamax Vessels							
<2,000	4,000	489	1,956,000	0	0	0	0
2,000-3,000	4,000	577	2,308,000	154	616,000	49	196,000
3,000-4,000	4,000	396	1,584,000	665	2,660,000	195	780,000
Post-Panamax Vessels							
4,000-5,000	1,000	119	119,000	205	205,000	243	243,000
>5,000	1,000	49	49,000	0	0	486	486,000
Total		1,630	6,016,000	1,024	3,481,000	973	1,705,000

Notes:

1. This table assumes that all vessels calling at the Port of Oakland will discharge ballast water, whereas some vessels have the capability to transfer ballast water internally and typically do not discharge. The table does not distinguish between vessels that perform oceanic ballast water exchange from those that do not.

2. The number of vessel calls in this column is based on a total of 973 vessel calls for 2010 (see row #4 [dredging only scenario] and column E in Table A6 from the JWD Report [JWD 1998]) x the distribution of vessel calls by class size for 2010 (Table A2 from the JWD Report).

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